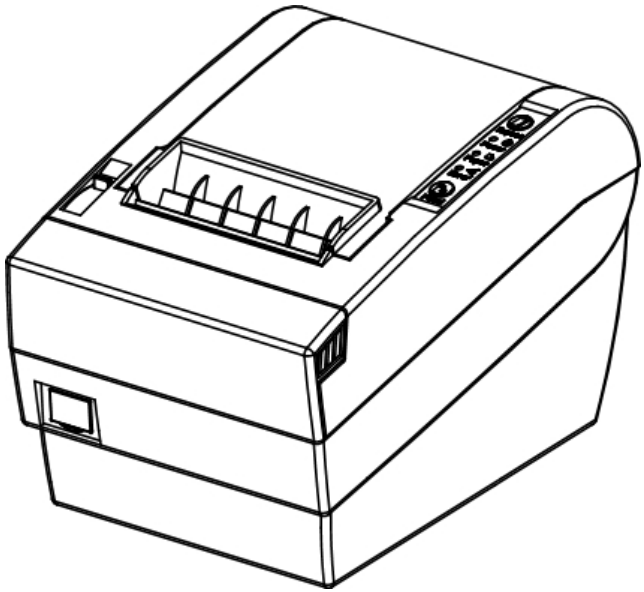
User's Manual

1 Station Thermal Line Receipt Printer

MODEL : **GTP-290**

VERSION : 1.00



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1. GENERAL DESCRIPTION

1.1 Overview

The GTP-290 Series Line Thermal Receipt Printer is designed for use with ECR, electronic instruments, computer peripheral equipment, kitchen printers and so on.

1.2 Features

1). Compact desktop Line Thermal printer.

2). Easy loading designed for dropping the paper roll

3.). Interface conformity to RS-232C, centronics ,USB port depends on the Interface card which is removeable and other option of Interface for different application.

4). Command protocol is compatible with ESC/POS.

5). 2 drawer kick-out.

6). The resident data buffer has storage capacity of about 128K-bytes, enable data to be received even while printing.

7). Support download bit image, directly bit image and bar-code printing.

8). The sensors include paper end, paper near end and cover sensor.

1.3 Accessories

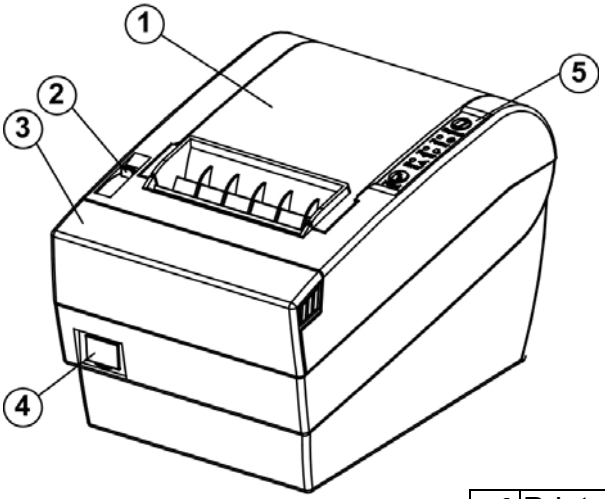
The following parts are included in this set of printer. Please confirm.

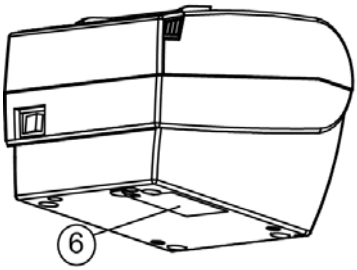
Paper roll	(1 roll)
Power adapter	(1 unit)
Power core	(1 unit)
User's manual	(1 booklet)
Option(one of items below will be included)	
Cable for RS-232C (depend on RS-232C interface card)	(1 unit)
Cable for Centronics (depend on Centronics interface card)	(1 unit)
Cable for USB (depend on USB interface card)	(1 unit)

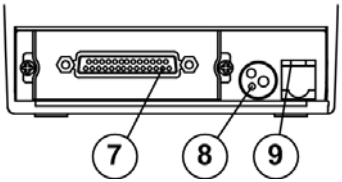
2. MAIN SPECIFICATIONS

Item		Description
1	Printing method	Thermal line
2	Printing speed	Approx. 150~220mm / second
3	Number of columns	40 columns
4	Character structure	12x24 (alphanumeric)
5	Line pitch	1/6 inch (4.23mm)
6	Detector	Paper end,Paper near end, cover
7	Paper	Single-ply thermal paper roll Paper roll 79.5 ± 0.5 (W) x 83 (max) mm
8	Head MCBF	100KM
9	Cutter MCBF	500 Thousand times
10	Power supply	24VDC / 2.1A .
11	Interface	RS-232C, Centronics and USB
12	Weight	Approx.1.25Kg
13	External dimensions	140.7(W) x 190(D) x 133(H)mm
14	Operating temp.	0 to 40℃
15	Storage temp.	-20 to 60℃
16	SRAM	128 KB
17	FLASH	512 KB

3. EXTERNAL APPEARANCE AND PART DESCRIPTIONS





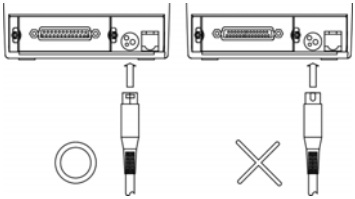


1	Printer cover
2	Cover open lever
3	Cutter cover
4	Power switch
5	Control panel
6	DIP switch cover
7	Interface connector
8	Power connector
9	Cash Drawer connector

4. INSTALLATIONS

4.1 How to Connect Power Adapter

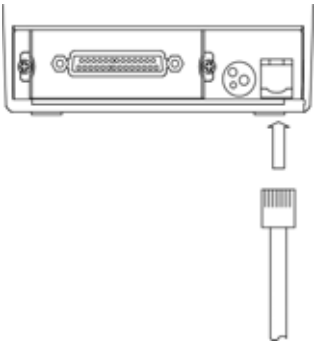
(1) Ensure that the power switch is OFF.
(2) Plug the power connector into the printer's power connector at the arrow mark facing upward.
(3) Plug the power cord into the outlet, and turn on the power.
(4) Connector Specifications shows as below:



Pin Number	Signal Name
1	+24VDC
2	GND
3	NC
Shell	Frame GND

4.2 How to Connect Cash Drawer

(1) Ensure that the power switch is OFF.
(2) Plug the cash drawer connector into the Drawer kick out connector at the arrow mark facing upward.
(3) Plug the connector into the RJ11 phone jack.

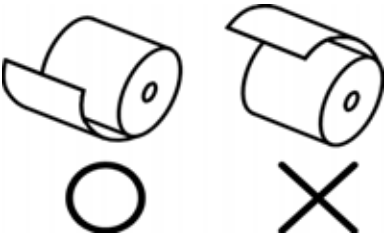


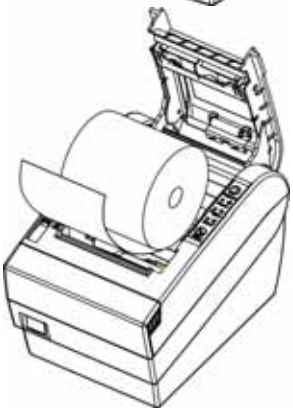
Note: Power for drawer kick out is 24vdc, if voltage of cash drawer is different, it may cause cannot open situation or harm the cash drawer.

4.3 Setting of the Printer Cover and Setting Paper

(1) Push the cover open lever, and open the printer cover

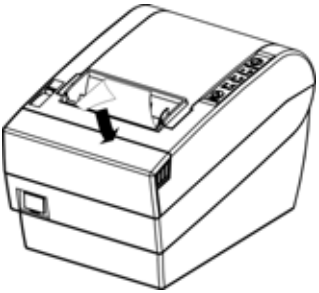
(2) Remove any used paper roll's core, and insert the paper roll as picture bellows shown:





Put the paper roll into paper trough and pull out the leading edge of the paper as picture above shown.

(3) Pull out the leading edge of paper , close the printer cover



(4) Tear off the spare of paper as picture shown and complete paper replacing :

Note :

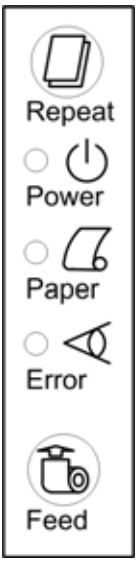
1.paper thickness are 0.06-0.10mm

2.paper width are range from 79-80mm

3.Roll diameter max. 83mm

5. CONTROL PANEL

5-1. Basic Operation



(1) **Feed** Line feed button
When this push-button switch is pressed once briefly (for 0.5 seconds or less), the paper is fed forward by one line. When it is held down continuously, the paper is fed forward continuously until the switch is released.

(2) **Repeat** Repeat button
When on page mode or line mode situation, there maybe paper jam or paper exhaust situation , please press repeat button, then printer will repeat the last event which was not complete.

(3) **Power** lamp (green LED)

Lights indicate power well.

(4) **Paper** lamp (Yellow LED)
- Lamp indicator will remain lighting when paper near end or paper end.
- Lamp indicator will keep sparkling when printer process self testing or hexadecimal dump test.

The flash timing chart shows as below:

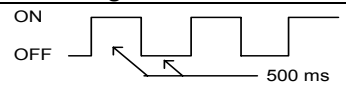
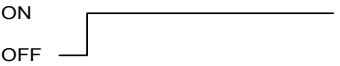
Printer status	Blinking Pattern
Self Testing	
Paper end	

Table 5-1. PAPER Lamp Display

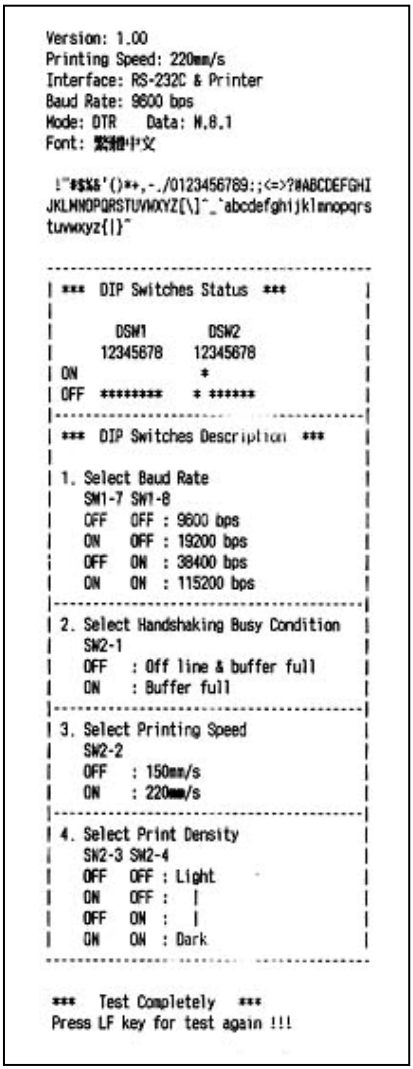
(5) **Error** lamp (red LED)

When printer cover is not properly closed or paper jam happen on cutter part or paper is not put properly, the error indicator lamp (red LED) will light.

5-2. Switch Operation (Combined Switch operation)

(1) SELF PRINT TEST

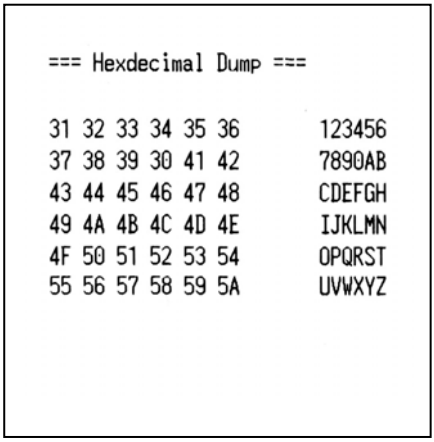
LF + POWER ON (Turn the power on while holding the **LF** button depressed, the buzzer gives one short beep.)
Self-testing will be performed according to the VER. NO., printer settings and characters etc (Ref. sheet1). When the **LF** button is held again after self-printing stopped, the printer will print out again. To turn off this mode, it is necessary to turn off the printer power completely.



```
Version: 1.00
Printing Speed: 220mm/s
Interface: RS-232C & Printer
Baud Rate: 9600 bps
Mode: DTR    Data: N,8,1
Font: 繁體中文

 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHI
JKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrs
tuvwxyz{|}~

-----------------------------------------
| ***  DIP Switches Status  ***          |
|                                        |
|        DSW1         DSW2               |
|      12345678     12345678             |
| ON                 *                   |
| OFF  ********     * ******             |
|----------------------------------------|
| ***  DIP Switches Description  ***     |
|                                        |
| 1. Select Baud Rate                    |
|    SW1-7 SW1-8                         |
|    OFF   OFF : 9600 bps                |
|    ON    OFF : 19200 bps               |
|    OFF   ON  : 38400 bps               |
|    ON    ON  : 115200 bps              |
|----------------------------------------|
| 2. Select Handshaking Busy Condition   |
|    SW2-1                               |
|    OFF   : Off line & buffer full      |
|    ON    : Buffer full                 |
|----------------------------------------|
| 3. Select Printing Speed               |
|    SW2-2                               |
|    OFF   : 150mm/s                     |
|    ON    : 220mm/s                     |
|----------------------------------------|
| 4. Select Print Density                |
|    SW2-3 SW2-4                         |
|    OFF   OFF : Light                   |
|    ON    OFF :   |                     |
|    OFF   ON  :   |                     |
|    ON    ON  : Dark                    |
-----------------------------------------

***   Test Completely   ***
Press LF key for test again !!!
```

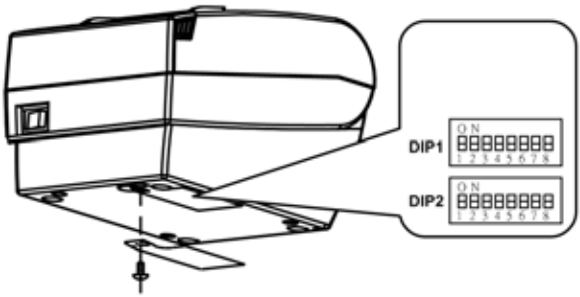
(2) HEXADECIMAL DUMP MODE

Repeat + POWER ON (Turn the power on while holding the **Repeat** button depressed, the buzzer gives one short beep.)
Each of the signals sent from the computer to the printer will be printed out in hexadecimal code. This function allows you to check if a control code that sent to the printer by the program being used is correct or not.
To turn off the mode, it is necessary to turn off the printer completely.



5-3. Setting

Please use screw driver to unlock the DIP switch cover at the bottom, open it as shown on picture right side and it shows DIP switch DIP1 & DIP2 Settings as below



(1). Baud rate

SW1-7	SW1-8	Baud rate
OFF	OFF	9600 bps
ON	OFF	19200 bps
OFF	ON	38400 bps
ON	ON	115200 bps

(2). Select handshaking busy condition

SW2-1	Handshaking busy condition
OFF	Off line and receive buffer full
ON	Receive buffer full only

(3). Select printing speed

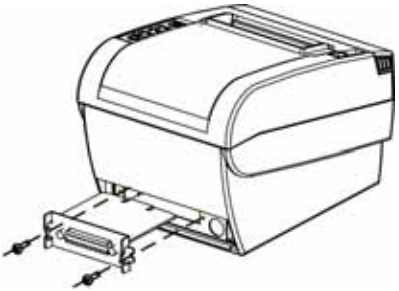
SW2-2	Printing speed
OFF	150 mm/s
ON	220 mm/s

(4). Select print density

SW2-3	SW2-4	Printing density
OFF	OFF	Light
ON	OFF	|
OFF	ON	|
ON	ON	Dark

6. INTERFACE SPECIFICATIONS

GTP-290 provides RS232c, IEEE 1284, USB and other interface cards, which is replaceable for more convenient adjustment according to requirement.



6.1 Changing the interface card

Turn off the printer and all components connected to it, remove the 2 screws and remove the interface card unit. Replace the new interface card unit and secure it with screws driver.

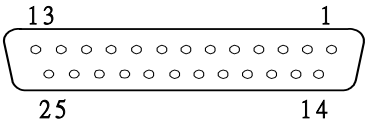
6.2 Serial interface specifications

6.2.1 Specifications (Conform to RS-232C)

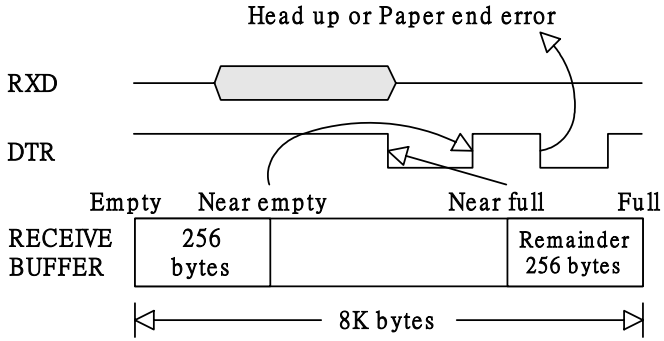
Synchronizing system	: Asynchronous system
Handshaking	: DTR/DSR control
Baud rates	: 9600,19200,38400,115200 (Refer chapter 5-3)
Data length	: Fixed 8 bit length
Parity	: None

6.2.2 Pin assignment

No.	Signal Name	I/O	Signal Name
2	TXD	Output	Transmit data
3	RXD	Input	Receive data
6	DSR	Input	Data set ready
20	DTR	Output	Data terminal ready
7	GND	-	Signal ground



6.2.3 Timing Chart



6.3 Parallel interface specifications

6.3.1 Specifications (Conform to Centronics)

Data transmission format : 8-bit parallel

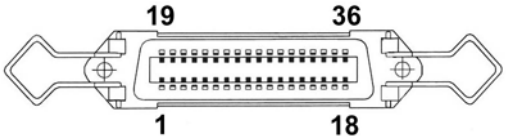
Synchronizing system : According to the strobe pulses

Handshaking : According to the BUSY signal

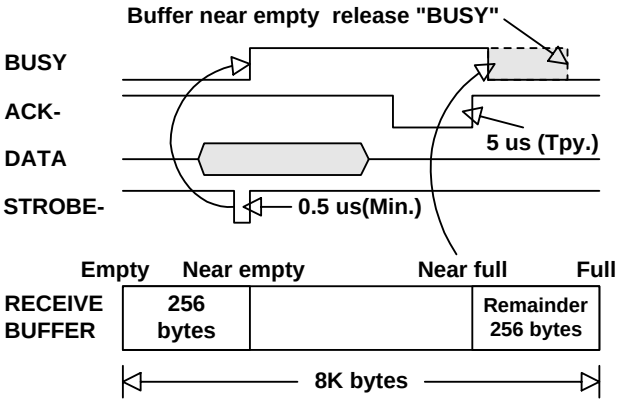
Signal level : TTL level

6.3.2 Pin assignment

No.	Signal Name	No.	Signal Name
1	STB-	19-30	TWISTED PAIR GND
2-9	DATA 1 – DATA 8	31	RESET-
10	ACK-	32	FAULT-
11	BUSY	33	GND
12	PE	34-36	NC
13-15	NC		
16	GND		
17	F.G.		
18	NC		



6.3.3 Timing Chart



7. DRAWER KICK CONNECTOR

7.1 Specifications

(1) Data Transfer System

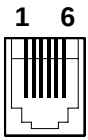
The pulse specified by “ESC p” is output to this connector. The host can confirm the status of the input signal by using the “ESC u” command.

(2) Electrical Characteristics

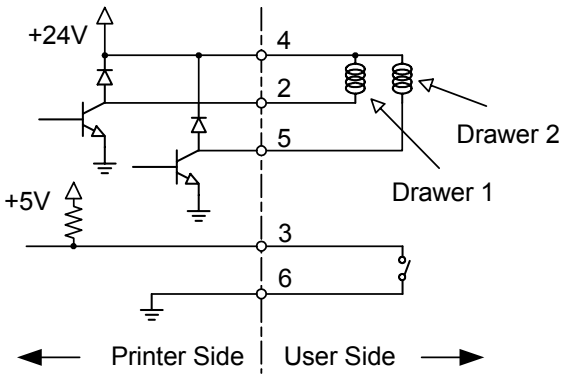
1. Drive voltage : DC 24V
2. Drive current : 0.8A at maximum (Should be within 510 ms)
3. Switch signal : Signal level “L” = 0 to 0.5V
   “H” = 3 to 5V

7.2 Connector’s Pin Connection

No.	Signal Name	I/O
1	NC	-
2	Drawer kick-out 1	Output
3	Drawer open/close signal	Input
4	+24V	-
5	Drawer kick-out 2	Output
6	Signal GND	-



7.3 Drive Circuit



8. COMMAND

8.1 Control Codes list

Command	HT
Code (Hex)	09
Name	Horizontal tab

Command	LF
Code (Hex)	0A
Name	Print and line feed

Command	FF
Code (Hex)	0C
Name	Print and return to standard mode in page mode

Command	CR
Code (Hex)	0D
Name	Print and carriage return

Command	CAN
Code (Hex)	18
Name	Cancel print data on page mode

Command	DLE EOT n
Code (Hex)	10 04 n
Name	Real-time status transmission

Command	DLE ENQ n
Code (Hex)	10 05 n
Name	Real-time request to printer

Command	DLE DC4 n m t
Code (Hex)	10 14 n m t
Name	Generate pulse at real-time

Command	ESC FF
Code (Hex)	1B 0C
Name	Print data in page mode

Command	ESC SP n
Code (Hex)	1B 20 n
Name	Set right-side character spacing

Command	ESC ! n
Code (Hex)	1B 21 n
Name	Select print mode(s)

Command	ESC $ nL nH
Code (Hex)	1B 24 nL nH
Name	Set absolute print position

Command	ESC % n
Code (Hex)	1B 25 n
Name	Select/cancel user-defined character set

Command	ESC &y c1 c2[x1 d1…d(y * x1)]…[xk d1…d(y * xk)]
Code (Hex)	1B 26 y c1 c2[x1 d1…d(y * x1)]…[xk d1…d(y * xk)]
Name	Define user-defined characters

Command	ESC * m nL nH d1…dk
Code (Hex)	1B 2A m nL nH d1…dk
Name	Select bit-image mode

Command	ESC – n
Code (Hex)	1B 2D n
Name	Turn underline mode on/off

Command	ESC 2
Code (Hex)	1B 32
Name	Select default line spacing

Command	ESC 3 n
Code (Hex)	1B 33 n
Name	Set line spacing

Command	ESC = n
Code (Hex)	1B 3D n
Name	Set peripheral device

Command	ESC ? n
Code (Hex)	1B 3F n
Name	Cancel user-defined characters

Command	ESC @
Code (Hex)	1B 40
Name	Initialize printer

Command	ESC D n1…nk NUL
Code (Hex)	1B 44 n1 …nk 00
Name	Set Horizontal tab positions

Command	ESC E n
Code (Hex)	1B 45 n
Name	Turn emphasized mode on/off

Command	ESC G n
Code (Hex)	1B 47 n
Name	Turn on/off double-strike mode

Command	ESC J n
Code (Hex)	1B 4A n
Name	Print and feed paper

Command	ESC L
Code (Hex)	1B 4C
Name	Select page mode

Command	ESC M n
Code (Hex)	1B 4D n
Name	Select character font

Command	ESC R n
Code (Hex)	1B 52 n
Name	Select an international character set

Command	ESC V n
Code (Hex)	1B 56 n
Name	Turn 90° clockwise rotation mode on/off

Command	ESC W xL xH yL yH dxL dxH dyL dyH
Code (Hex)	1B 57 xL xH yL yH dxL dxH dyL dyH
Name	Set printing area in page mode

Command	ESC \ nL nH
Code (Hex)	1B 5C nL nH
Name	Set relative print position

Command	ESC a n
Code (Hex)	1B 61 n
Name	Select justification

Command	ESC c 3 n
Code (Hex)	1B 63 33 n
Name	Select paper sensors to output paper end signals

Command	ESC c 4 n
Code (Hex)	1B 63 34 n
Name	Select paper sensor(s)s to stop printing

Command	ESC c 5 n
Code (Hex)	1B 63 35 n
Name	Enable/disable panel buttons

Command	ESC d n
Code (Hex)	1B 64 n
Name	Print and feed n lines

Command	ESC p m t1 t2
Code (Hex)	1B 70 m t1 t2
Name	Generate pulse

Command	ESC t n
Code (Hex)	1B 74 n
Name	Select character code table

Command	ESC { n
Code (Hex)	1B 7B n
Name	Turns on/off upside-down printing mode

Command	FS g 1 m a1 a2 a3 a4 nL nH d1…dk
Code (Hex)	1C 67 31 m a1 a2 a3 a4 nL nH d1…dk
Name	Read from user NV memory

Command	FS g 2 m a1 a2 a3 a4 nL nH
Code (Hex)	1C 67 32 m a1 a2 a3 a4 nL nH
Name	Read from user NV memory

Command	FS p n m
Code (Hex)	1C 70 n m
Name	Print NV bit image

Command	FS q n [xL xH yL yH d1…dk]1…[xL xH yL yH d1…dk]n
Code (Hex)	1C 71 n[xL xH yL yH d1…dk1…[xL xH yL yH d1…dk]n
Name	Define NV bit image

Command	GS ! n
Code (Hex)	1D 21 n
Name	Select character size

Command	GS $ nL nH
Code (Hex)	1D 24 nL nH
Name	Set absolute vertical print position in page mode

Command	GS * x y d1..d(x*y*8)
Code (Hex)	1D 2A
Name	Define downloaded bit image

Command	GS (A pL pH n m
Code (Hex)	1D 28 41
Name	Execute test print

Command	GS / m
Code (Hex)	1D 2F m
Name	Print downloaded bit image

Command	GS :
Code (Hex)	1D 3A
Name	Start/end macro definition

Command	GS B n
Code (Hex)	1D 42 n
Name	Turn white/black reverse printing mode

Command	GS H n
Code (Hex)	1D 48 n
Name	Select printing position for HRI characters

Command	GS I n
Code (Hex)	1D 49 n
Name	Transmit printer ID

Command	GS L nL nH
Code (Hex)	1D 4C nL nH
Name	Set left margin

Command	GS P x y
Code (Hex)	1D 50 x y
Name	Set horizontal and vertical motion units

Command	GS V m (n)
Code (Hex)	1D 56 m (n)
Name	Select cut mode and cut paper

Command	GS W nL nH
Code (Hex)	1D 57 nL nH
Name	Set printing area width

Command	GS \ nL nH
Code (Hex)	1D 5C nL nH
Name	Set relative vertical print position in page mode

Command	GS ^ r t m
Code (Hex)	1D 5E r t m
Name	Execute macro

Command	GS a n
Code (Hex)	1D 61 n
Name	Enable/disable automatic status back(ASB)

Command	GS b n
Code (Hex)	1D 62 n
Name	Turns smoothing mode on/off

Command	GS f n
Code (Hex)	1D 66 n
Name	Select font for Human Readable Interpretation(HRI)characters

Command	GS h n
Code (Hex)	1D 68 n
Name	Select bar code height

Command	①GS k m d1,,,dk NUL , ②GS k m n d1…dn
Code (Hex)	1D 6B ①m d1,,,dk 00 , ② m n d1…dn
Name	Print bar code

Command	GS r n
Code (Hex)	1D 72 n
Name	Transmit status

Command	GS v 0 m xL xH yL yH d1…dk
Code (Hex)	1D 76 30 m xL xH yL yH d1…dk
Name	Print raster bit image

Command	GS w n
Code (Hex)	1D 77
Name	Set bar code width

Command	FS ! n
Code (Hex)	1C 21 n
Name	Set print mode(s) for Kanji characters

Command	FS &
Code (Hex)	1C 26
Name	Select Kanji character mode

Command	FS - n
Code (Hex)	1C 2D n
Name	Turn underline mode on/off for Kanji characters

Command	FS .
Code (Hex)	1C 2E
Name	Cancel Kanji character mode

Command	FS 2 c1 c2 d1…dk
Code (Hex)	1C 32 c1 c2 d1…dk
Name	Define user-defined Kanji characters

Command	FS C n
Code (Hex)	1C 43 n
Name	Select Kanji character code system

Command	FS S n1 n2
Code (Hex)	1C 53 n1 n2
Name	Set left- and right-side Kanji character spacing

Command	FS W n
Code (Hex)	1C 57 n
Name	Turn quadruple-size mode on/off for Kanji characters

9. CHARACTER CODE TABLES

9.1 International Character sets

	Country	ASCII (Hexadecimal notation)											
		23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
0	USA	#	$	@	[	\	]	^	`	{	|	}	~
1	France	#	$	à	°	ç	§	^	`	é	ù	è	¨
2	Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	β
3	U.K.	£	$	@	[	\	]	^	`	{	|	}	~
4	Denmark I	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
5	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6	Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
7	Spain I	Pt	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
8	Japan	#	$	@	[	¥	]	^	`	{	|	}	~
9	Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
10	Denmark II	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
11	Spain II	#	$	á	¡	Ñ	¿	é	´	í	ñ	ó	ú
12	Latin America	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú
13	Korea	#	$	@	[	₩	]	ˆ	´	{	|	}	~

9.2 Code Page: 00H to 7FH

	00	10	20	30	40	50	60	70
0	NUL	DLE	(SP)	0	@	P	`	p
1		XON	!	1	A	Q	a	q
2			“	2	B	R	b	r
3		XOF	#	3	C	S	c	s
4	EOT	DC4	$	4	D	T	d	t
5	ENQ		%	5	E	U	e	u
6			&	6	F	V	f	v
7			‘	7	G	W	g	w
8		CAN	(	8	H	X	h	x
9	HT		)	9	I	Y	i	y
A	LF		*	:	J	Z	j	z
B		ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	\	l	|
D	CR	GS	-	=	M	]	m	}
E			.	>	N	^	n	~
F			/	?	O	_	o	(SP)

9.3 Code Page: PC437 (USA, European Standard)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	á	░	└	╨	α	≡
1	ü	æ	í	▒	┴	╤	β	±
2	é	Æ	ó	▓	┬	╥	Γ	≥
3	â	ô	ú	│	├	╙	π	≤
4	ä	ö	ñ	┤	─	╘	Σ	⌠
5	à	ò	Ñ	╡	┼	╒	σ	⌡
6	å	û	ª	╢	╞	╓	µ	÷
7	ç	ù	º	╖	╟	╫	τ	≈
8	ê	ÿ	¿	╕	╚	╪	Φ	○
9	ë	Ö	⌐	╣	╔	┘	θ	●
A	è	Ü	¬	║	╩	┌	Ω	•
B	ï	¢	½	╗	╦	█	δ	√
C	î	£	¼	╝	╠	▄	∞	ⁿ
D	ì	¥	¡	╜	═	▌	Ø	²
E	Ä	Pt	«	╛	╬	▐	∈	■
F	Å	ƒ	»	┐	╧	▀	∩	(SP)

9.4 Code Page: Katakana (Japanese)

	80	90	A0	B0	C0	D0	E0	F0
0	▁	┴		ｰ	ﾀ	ﾐ	=	×
1	▁	┬	｡	ｱ	ﾁ	ﾑ	╞	円
2	▂	┤	｢	ｲ	ﾂ	ﾒ	‡	年
3	▂	├	｣	ｳ	ﾃ	ﾓ	╡	月
4	▃	─	､	ｴ	ﾄ	ﾔ	◢	日
5	▃	┼	･	ｵ	ﾅ	ﾕ	◣	時
6	▄	‖	ｦ	ｶ	ﾆ	ﾖ	◥	分
7	▄	│	ｧ	ｷ	ﾇ	ﾗ	◤	秒
8	▌	┌	ｨ	ｸ	ﾈ	ﾘ	♠	〒
9	▌	┐	ｩ	ｹ	ﾉ	ﾙ	♥	市
A	▋	└	ｪ	ｺ	ﾊ	ﾚ	♦	区
B	▋	┘	ｫ	ｻ	ﾋ	ﾛ	♣	町
C	▉	┌	ｬ	ｼ	ﾌ	ﾜ	●	村
D	▉	╮	ｭ	ｽ	ﾍ	ﾝ	○	人
E	▉	╯	ｮ	ｾ	ﾎ	ﾞ	／	▒
F	┼	╰	ｯ	ｿ	ﾏ	ﾟ	＼	(SP)

9.5 Code Page: PC850 (Multilingual)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	á	░	└	ð	Ó	–
1	ü	æ	í	▒	┴	Ð	ß	±
2	é	Æ	ó	▓	┬	Ê	Ô	=
3	â	ô	ú	│	├	Ë	Ò	¾
4	ä	ö	ñ	┤	─	È	õ	¶
5	à	ò	Ñ	Á	┼	€	Õ	§
6	å	û	a	Â	ã	Í	µ	÷
7	ç	ù	o	À	Ã	Î	þ	¸
8	ê	ÿ	¿	©	╚	Ï	Þ	°
9	ë	Ö	®	╣	╔	┘	Ú	¨
A	è	Ü	¬	║	╩	┌	Û	•
B	ï	ø	½	╗	╦	█	Ù	¹
C	î	£	¼	╝	╠	▄	ý	³
D	ì	Ø	¡	¢	═	¦	Ý	²
E	Ä	×	«	¥	╬	Ì	¯	■
F	Å	ƒ	»	┐	¤	▀	´	(SP)

9.6 Code Page: PC860 (Portuguese)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	á	▒	└	╨	α	≡
1	ü	À	í	▓	┴	╤	β	±
2	é	È	ó	▓	┬	╥	Γ	≥
3	â	ô	ú	│	├	╙	π	≤
4	ã	õ	ñ	┤	─	╘	Σ	⌠
5	à	ò	Ñ	╡	┼	╒	σ	⌡
6	Á	Ú	a	╢	╞	╓	µ	÷
7	ç	ù	o	╖	╟	╫	τ	≈
8	ê	Ì	¿	╕	╚	╪	Φ	○
9	Ê	Õ	Ò	╣	╔	┘	θ	●
A	è	Ü	¬	║	╩	┌	Ω	•
B	Í	¢	½	╗	╦	█	δ	√
C	Ô	£	¼	╝	╠	▄	∞	ⁿ
D	ì	Ù	¡	╜	═	▌	Ø	²
E	Ã	Pt	«	╛	╬	▐	∈	■
F	Â	Ó	»	┐	╧	▀	∩	(SP)

9.7 Code Page: PC863 (Canadian-French)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	¦	░	└	⊥	α	≡
1	ü	È	´	▒	┴	╤	β	±
2	é	Ê	ó	▓	┬	╥	Γ	≥
3	â	ô	ú	│	├	╙	π	≤
4	Â	Ë	¨	┤	─	╘	Σ	⌠
5	à	Ï	›	╡	┼	╒	σ	⌡
6	¶	û	³	╢	╞	╓	µ	÷
7	ç	ù	¯	╖	╟	╫	τ	≈
8	ê	¤	Î	╕	╚	╪	Φ	○
9	ë	Ô	⌐	╣	╔	┘	θ	●
A	è	Ü	¬	║	╩	┌	Ω	•
B	ï	¢	½	╗	╦	█	δ	√
C	î	£	¼	╝	╠	▄	∞	ⁿ
D	=	Ù	¾	╜	═	▌	Ø	²
E	À	Û	«	╛	╬	▐	∈	■
F	§	ƒ	»	┐	╧	▀	∩	(SP)

9.8 Code Page: PC865 (Nordic)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	á	▒	└	⊥	α	≡
1	ü	æ	í	▒	┴	╤	β	±
2	é	Æ	ó	▓	┬	╥	Γ	≥
3	â	ô	ú	│	├	╙	π	≤
4	ä	ö	ñ	┤	─	╘	Σ	⌠
5	à	ò	Ñ	╡	┼	╒	σ	⌡
6	å	û	a	╢	╞	╓	µ	÷
7	ç	ù	o	╖	╟	╫	τ	≈
8	ê	ÿ	¿	╕	╚	╪	Φ	°
9	ë	Ö	⌐	╣	╔	┘	θ	●
A	è	Ü	¬	║	╩	┌	Ω	·
B	ï	ø	½	╗	╦	█	δ	√
C	î	£	¼	╝	╠	▄	∞	ⁿ
D	ì	Ø	¡	╜	═	▌	ø	²
E	Ä	Pt	«	╛	╬	▐	∈	■
F	Å	ƒ	¤	┐	╧	▀	∩	(SP)

9.9 Code Page: PC852 (Eastern Europe)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	á	░	└	đ	Ó	
1	ü	Ĺ	Í	▒	┴	Đ	ß	˝
2	é	Í	ó	▓	┬	Ď	Ô	˛
3	â	ô	ú	│	├	Ë	Ń	ˇ
4	ä	ö	Ą	┤	─	ď	ń	˘
5	ů	Ľ	ą	Á	┼	Ň	ň	§
6	ć	Ě	Ž	Â	Ă	Í	Š	÷
7	ç	Ś	ž	Ě	ă	Î	š	¸
8	ł	ś	Ę	Ş	╚	ě	Ŕ	°
9	ë	Ö	ę	╣	╔	┘	Ú	¨
A	Ő	Ü		║	╩	┌	ŕ	•
B	ő	Ť	ź	╗	╦	█	Ű	ű
C	î	ť	Č	╝	╠	▄	ý	Ř
D	Ź	Ł	ş	Ż	═	Ţ	Ý	ř
E	Ä	×	«	ż	╬	Ů	ţ	■
F	Ć	č	»	ı	¤	▀	´	(SP)

9.10 Code Page: PC866 (Russian)

	80	90	A0	B0	C0	D0	E0	F0
0	А	Р	а	▒	└	╨	р	Ё
1	Б	С	б	▒	┴	╤	с	ё
2	В	Т	в	▓	┬	╥	т	Е
3	Г	У	г	│	├	╙	у	є
4	Д	Ф	д	┤	─	╘	ф	Ї
5	Е	Х	е	╡	┼	╒	х	ї
6	Ж	Ц	ж	╢	╞	╓	ц	Ў
7	З	Ч	з	╖	╟	╫	ч	ў
8	И	Ш	и	╕	╚	╪	ш	○
9	Й	Щ	й	╣	╔	┘	щ	•
A	К	Ъ	к	║	╩	┌	ъ	·
B	Л	Ы	л	╗	╦	█	ы	√
C	М	Ь	м	╝	╠	▄	ь	Na
D	Н	Э	н	╜	═	▌	э	¤
E	О	Ю	о	╛	╬	▐	ю	■
F	П	Я	п	┐	╧	▀	я	(SP)

9.11 Code Page: PC857 (Turkish)

	80	90	A0	B0	C0	D0	E0	F0
0	Ç	É	á	░	└	º	Ó	-
1	ü	æ	Í	▒	┴	ª	β	±
2	é	Æ	ó	▓	┬	Ê	Ô	
3	â	ô	Ú	│	├	Ë	Ò	¾
4	ä	ö	ñ	┤	─		õ	¶
5	à	ò	Ñ	Á	┼		Õ	§
6	å	û	Ğ	Â	ã	Í	µ	+
7	ç	ù	ğ	À	Ã	Î		¸
8	ê	±	¿	©	╚	Ï	×	○
9	ë	Ö	®	╣	╔	┘	Ú	¨
A	è	Ü	¬	║	╩	┌	Û	•
B	ï	ø	½	╗	╦	█	Ù	¹
C	î	£	¼	╝	╠	▄	ì	³
D	¦	Ø	¡	¢	═	Ţ	Ÿ	²
E	Ä	□	“	¥	╬	Ì	¯	■
F	Å	□	”	ı	¤	▀	´	(SP)

9.12 Windows Code Page

	80	90	A0	B0	C0	D0	E0	F0
0	€			°	À	Đ	à	ð
1		‘	Í	±	Á	Ñ	á	ñ
2	,	’	¢	²	Â	Ò	â	ò
3	*f*	“	£	³	Ã	Ó	ã	ó
4	„	”	¤	´	Ä	Ô	ä	ô
5	…	•	¥	µ	Å	Õ	å	õ
6	†	–	¦	¶	Æ	Ö	æ	ö
7	‡	—	§	·	Ç	×	ç	÷
8	ˆ	~	¨	¸	È	Ø	è	ø
9	‰	™	©	¹	É	Ù	é	ù
A	Š	š	ª	º	Ê	Ú	ê	ú
B	‹	›	«	»	Ë	Û	ë	û
C	Œ	œ	¬	¼	Ì	Ü	ì	ü
D			-	½	Í	Ý	í	ý
E			®	¾	Î	Þ	î	þ
F		Ÿ	—	¿	Ï	ß	ï	ÿ

10. EXTERNAL DIMENSIONS